

CLAIMS

We claim:

1. A cash dispensing automated banking machine comprising:
 - at least one computer;
 - 5 a plurality of transaction function devices in operative connection with the at least one computer, wherein at least one of the transaction function devices includes a cash dispenser;
 - a device driver layer, wherein the device driver layer includes:
 - 10 a plurality of service provider components (SPs) operative in the at least one computer; and
 - at least one diagnostic interface;
 - 15 an application layer operative in the at least one computer, wherein the application layer includes at least one terminal application adapted to enable users of the machine to perform transaction functions including operation of the transaction function devices;

an XFS layer operative in the at least one computer, wherein the at least one terminal application is operative to control the transaction function devices through communication with the XFS layer, and wherein the SPs are operative to control the transaction function devices responsive to communication with the XFS layer; and

a diagnostic application operative in the computer, wherein through communication with the at least one diagnostic interface, the diagnostic application is operative to cause at least one internal component of at least one transaction function device to perform at least one function.

10 2. The machine according to claim 1, wherein the diagnostic application does not communicate with the at least one diagnostic interface through the XFS layer.

3. The machine according to claim 2, wherein the diagnostic application is operative to communicate with the XFS layer to deactivate the at least one transaction function device with respect to the XFS layer.

15 4. The machine according to claim 2, wherein the at least one internal component includes a motor.

5. The machine according to claim 3, wherein the at least one internal component includes a sensor.

6. The machine according to claim 1, wherein the device driver layer includes a module interface framework, wherein the module interface framework includes a module interface API, wherein the module interface API includes the diagnostic interface, wherein the diagnostic application is operative to cause the at least one internal component to perform the at least one function through the module interface API.

7. The machine according to claim 6, wherein the SPs are adapted to control the operation of the transaction function devices through the module interface API.

10 8. The machine according to claim 6, wherein the module interface framework includes a plurality of module interface components which correspond to the transaction function devices, wherein each module interface component is adapted to cause at least one corresponding transaction function device to operate, wherein the module interface framework further includes a device server that is operative responsive to communication through the module interface API
15 to selectively direct at least one of the module interface components to cause a corresponding transaction function device to operate.

9. The machine according to claim 8, wherein the device server is further operative responsive to communication through the module interface API to selectively direct at least one

of the module interface components to cause at least one internal component of a corresponding transaction function device to perform the at least one function.

10. The machine according to claim 9, wherein at least one of the SPs and the diagnostic application is operative to register at least one callback function with the device server, wherein the device server is operative responsive to at least one message originating from one of the transaction function devices to call the callback function.

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11. The machine according to claim 10, wherein the at least one message comprises an unsolicited status message.

12. A method comprising:

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a) causing with a terminal application, at least one transaction function device of an automated banking machine to operate through at least one communication with an XFS layer of the automated banking machine, wherein the automated banking machine includes a cash dispenser;

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b) causing with at least one diagnostic application, at least one internal component of the at least one transaction function device to perform at least one function without communicating with the at least one transaction function device through the XFS layer.

13. The method according to claim 12, wherein the automated banking machine includes a module interface framework, wherein in (a) the module interface framework is operative responsive to the at least one communication through the XFS layer to cause the at least one transaction function device to operate, wherein in (b) the module interface framework is operative responsive to the diagnostic application to cause the at least one internal component to perform the at least one function.

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14. The method according to claim 13, wherein the automated banking machine includes a plurality of transaction functions devices, wherein the module interface framework includes a plurality of module interface components, wherein each module interface component corresponds with at least one transaction function device, wherein the automated banking machine further comprises a device server operative in at least one computer of the automated banking machine, wherein in (a) the device server is operative to selectively direct one of the module interface components which corresponds to the at least one transaction function device to cause the at least one transaction function device to operate, wherein in (b) the device server is operative to selectively direct one of the module interface components which corresponds to the at least one transaction function device to cause the at least one internal component to perform the at least one function.

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16. The method according to claim 14, wherein (a) includes accessing the device server through a service provider component (SP), wherein in (b) the device server is not accessed through the SP.

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16. The method according to claim 15, wherein in (a) the SP accesses the device server using at least one module interface API, wherein in (b) the diagnostic application accesses the device server through a diagnostic interface of the at least one module interface API.

17. The method according to claim 15, further comprising:

5 c) registering at least one first callback function of the SP with the device server;

d) responsive to at least one first message from the at least one transaction function device, calling the at least one first callback function of the SP through operation of the device server.

10 18. The method according to claim 17, wherein in (d) the at least one message comprises an unsolicited status message of the at least one transaction function device.

19. The method according to claim 17, further comprising:

e) registering at least one second callback function of the diagnostic application with the device server; and

f) responsive to at least one second message from the at least one transaction function device, calling the at least one callback function of the diagnostic application through operation of the device server.

20. The method according to claim 19, wherein the module interface framework, 5 terminal application, diagnostic application, XFS layer, and SP are operative in the at least one computer of the automated banking machine.

21. The method according to claim 13, wherein (a) includes accessing the module interface framework through a service provider component (SP), wherein in (b) the module interface framework is not accessed through the SP.

10 22. The method according to claim 12, wherein the automated banking machine includes at least one device driver layer, wherein in (a) the device driver layer is operative responsive to the at least one communication through the XFS layer to cause the at least one transaction function device to operate, wherein in (b) the device driver layer is operative responsive to the diagnostic application to cause the at least one internal component to perform 15 the at least one function.

23. The method according to claim 21, wherein the device driver layer includes a service provider component (SP), wherein (a) includes accessing the SP through the XFS layer.

24. The method according to claim 12, wherein in (b) the at least one internal component includes a motor.

25. The method according to claim 12, wherein in (b) the at least one internal component includes a sensor.

5 26. The method according to claim 12, wherein in (a) the at least one transaction function device includes the cash dispenser.